

REMARKS

Claims 1-19 and 29-53 are currently pending and presented for examination. Claims 20-28 are canceled without prejudice or disclaimer. Applicants reserve the right to pursue the subject matter of any or all of the canceled claims in one or more continuing applications.

Claims 30-33 and 35-38 are currently amended. Support for these amendments can be found throughout the specification and claims as originally filed. For example, support for the amendments to claims 30, 31, 33, 35, 36 and 38 can be found at paragraphs [0090], [0097], Figure 4, Figure 5 and elsewhere throughout the specification as filed. Claims 32 and 37 are amended to correct a typographical error. Accordingly, none of the amendments to claims 30-33 or 35-38 constitute new matter.

Claims 39-53 are new. Support for these new claims can be found throughout the specification and claims as originally filed. For example, support for new claims 39-42 can be found at paragraph [0018], paragraph [0064], original claim 20 and elsewhere throughout the specification as filed. Support for new claim 43 can be found at paragraph [0064] and elsewhere throughout the specification as filed. Support for new claims 44 and 45 can be found at paragraph [0042] and elsewhere throughout the specification as filed. Support for new claim 46 can be found at paragraph [0010] and elsewhere throughout the specification as filed. Support for new claim 47 can be found at paragraph [0096] and elsewhere throughout the specification as filed. Support for new claims 48 and 49 can be found at paragraph [0097] and elsewhere throughout the specification as filed. Support for new claims 50 and 51 can be found at paragraph [0090] and elsewhere throughout the specification as filed. Support for claims 52 and 53 can be found in original claim 20 as originally filed and throughout the specification. As such, none of newly added claims 39-53 constitute new matter.

Information Disclosure Statement

Applicant provide herewith an Information Disclosure Statement (IDS) citing US Patent No. 5,447,962, which was mentioned by Examiner Hyun during the telephonic discussion. Applicants have reviewed this reference and do not believe that it affects the patentability of any of the currently pending claims.

Rejection of claims 1-10 and 13-19 under 35 U.S.C. § 103(a)

The Examiner rejects claims 1-3, 6-10, 13-16, 18, 19 and 29-38 under 35 U.S.C. § 103(a) as allegedly obvious over U.S. Patent No. 6,083,763 (Balch) in view of U.S. Patent Application Publication No. 2004/0067164 (VanBrunt et al.). In particular, the Examiner asserts that Balch discloses all of the elements of the above-rejected claims other than an aspiration means and “a dispenser that is configured to discontinue dispensing of reagents to wells where a reaction is not taking place” (see Office Action at pages 2-3). The Examiner, however, asserts that this deficiency is remedied by VanBrunt et al., who allegedly disclose an apparatus having an aspiration means and that is configured to abort further processing in vessels where the detector does not detect a reaction. The Examiner then contends that a skilled artisan would have combined the dispenser configuration disclosed by VanBrunt et al. with the instrument allegedly disclosed by Balch in order to “save time and cost” (see Office Action at page 3).

Applicants submit that claims 1-3, 6-10, 13-16, 18, 19 and 29-38 are not obvious under 35 U.S.C. § 103(a) over Balch in view of VanBrunt et al. because a skilled artisan would not be motivated to adapt the device disclosed by Balch with the programming disclosed by VanBrunt et al. Balch discloses a large scale assay device in which various hybridization or binding assays can be performed. The device has a dispenser head that can dispense fluid to a plurality of biosites in a chamber (see Balch at Figures 3, 4, 4a and 4b). The device can be programmed to detect whether or not binding occurs at a specific site (see Balch at column 6, lines 25-34). VanBrunt et al. disclose a liquid dispensing device that can be programmed to maintain the fluid level in vessels. If the fluid level falls outside of a defined range, the vessel can be discarded (see VanBrunt et al. at paragraph [0095]). A skilled artisan would not adapt the device of Balch as alleged by the Examiner. Once the binding reaction is preformed and detected using the Balch device, no more fluid dispensation steps are necessary. As such, there is absolutely no reason for the skilled artisan to adapt the device of Balch to maintain delivery of reagents to sites where binding is detected and to discontinue delivery of reagents to sites that are negative for binding. Each of the currently pending claims require that the dispenser “discontinue reagent delivery to one or more wells where failure is indicated while maintaining reagent delivery to wells where failure is not indicated.” As such, a skilled artisan would not be motivated to combine the

teachings of Balch and VanBrunt et al. so as to arrive at the subject matter set forth in the above-referenced claims.

Even if it is assumed, *arguendo*, that a skilled artisan would be motivated to combine the teaching of Balch and VanBrunt et al., Applicants would like to point out that any adaptation of the device of Balch with the programming disclosed by VanBrunt et al. would not result in the claimed invention. In other words, the combination of Balch and VanBrunt et al. does not teach or suggest all of the elements of any of the above-rejected claims as arranged in the claims. Adapting the device of Balch with the teachings of VanBrunt et al., if successful, might result in a device capable of maintaining fluid levels at sites where the binding assays are performed. It would not, however, result in the subject matter of any of the above-rejected claims, which relate to monitoring a chemical reaction. In particular, the combination of Balch and VanBrunt et al. fails to teach or suggest a means of determining whether a difference between a value expected if the chemical reaction is successful and said specific value indicates failure of the chemical reaction within a well." As such, the combination of Balch and VanBrunt et al. does not disclose all of the elements as arranged in the above-rejected claims.

In view of the foregoing remarks, Applicants respectfully request that the Examiner withdraw the rejection of claims 1-3, 6-10, 13-16, 18, 19 and 29-38 under 35 U.S.C. § 103(a).

Rejection of claims 4, 5 and 17 under 35 U.S.C. § 103(a)

The Examiner rejects claims 4, 5 and 17 under 35 U.S.C. § 103(a) as allegedly obvious over Balch in view of VanBrunt et al. and further in view of U.S. Patent No. 6,448,064 (Vo Dinh et al.). The Examiner acknowledges that neither Balch nor VanBrunt et al. disclose the use of LEDs to excite the sample. The Examiner, however, asserts that this missing element is disclosed by Vo Dinh et al. The Examiner then contends that a skilled artisan would have combined the disclosures of Balch, VanBrunt et al. and Vo Dinh et al. to arrive at the subject matter recited in claims 4, 5 and 17 since LEDs are cheaper than lasers. Furthermore, the Examiner asserts that the skilled artisan would have used a plurality of LEDs since such an arrangement would allegedly increase efficiency.

Applicants submit that claims 4, 5 and 17 are not obvious under 35 U.S.C. § 103(a). As discussed above, a skilled artisan would not combine the disclosure of Balch with that of

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VanBrunt et al. Vo Dinh et al. do not remedy this deficiency. As further discussed above, the combination of Balch and VanBrunt et al. also does not teach or suggest the arrangement of the elements as set forth in the above-rejected independent claims from which claims 4, 5 and 17 depend. Vo Dinh et al. do not remedy this deficiency. As such, none of claims 4, 5 or 17 are obvious over of any of the above-recited combinations of references.

In view of the foregoing remarks, Applicants respectfully request that the Examiner withdraw the rejection of claims 4, 5 and 17 under 35 U.S.C. § 103(a).

Rejection of claims 11 and 12 under 35 U.S.C. § 103(a)

The Examiner rejects claims 11 and 12 under 35 U.S.C. § 103(a) as allegedly obvious over Balch in view of VanBrunt et al. and further in view of U.S. Patent Application Publication No. 2003/0207441 (Eyster et al.) (claim 11) or Balch in view of VanBrunt et al. and further in view of U.S. Patent No. 5,639,603 (Dower et al.) (claim 12). The Examiner acknowledges that neither Balch nor VanBrunt et al. disclose a computer configured to generate a warning message as recited in claim 11 or a liquid removal device comprising a centrifuge as recited in claim 12. The Examiner, however, asserts that these missing elements are disclosed by Eyster et al. and Dower et al., respectively. The Examiner then contends that a skilled artisan would have combined the disclosures of Balch, VanBrunt et al. and Eyster et al. to arrive at the subject matter recited in claim 11 and the disclosures of Balch, VanBrunt et al. and Dower et al. to arrive at the subject matter recited in claim 12.

Applicants submit that claims 11 and 12 are not obvious under 35 U.S.C. § 103(a). As discussed above, a skilled artisan would not combine the disclosure of Balch with that of VanBrunt et al. Neither Eyster et al. nor Dower et al. remedy this deficiency. As further discussed above, the combination of Balch and VanBrunt et al. does not teach or suggest the arrangement of the elements as set forth in independent claim 9, from which claims 11 and 12 depend. Neither Eyster et al. nor Dower et al. remedy this deficiency. As such, neither claim 11 nor 12 are obvious over of any of the above-recited combinations of references.

In view of the foregoing remarks, Applicants respectfully request that the Examiner withdraw the rejection of claims 11 and 12 under 35 U.S.C. § 103(a).

Rejection of claims 1-19 and 29-38 under 35 U.S.C. § 103(a)

The Examiner rejects claims 1-4, 6-8 and 29-38 as allegedly obvious under 35 U.S.C. § 103(a) over U.S. Patent No. 6,083,763 (Balch) in view of PCT Application Publication No. WO01/69210 (Hartwich et al.). In particular, the Examiner asserts that Balch discloses all of the elements of the above-rejected claims other than “a dispenser that is configured to discontinue dispensing of reagents to wells where a reaction is not taking place” (see Office Action at page 6). The Examiner, however, asserts that in view of the disclosure of Hartwich et al., a skilled artisan would have configured the dispenser allegedly disclosed by Balch as specified in the above-rejected claims in order to “save time and cost” (see Office Action at page 7). In addition to the foregoing rejection, the Examiner rejects claim 5 as allegedly obvious over the combination of Balch and Hartwich et al. in view of Vo Dinh et al. The Examiner also rejects claims 9, 10, 13-16, 18, 19 and 34-38 as allegedly obvious over the combination of Balch and Hartwich et al. in view of U.S. Patent No. 6,485,913 (Becker et al.) and claim 11 as allegedly obvious over the combination of Balch, Hartwich et al. and Becker et al. in view of Eyster et al. Additionally, the Examiner rejects claim 12 as allegedly obvious over the combination of Balch and Hartwich et al. and Becker et al. in view of Dower et al., and finally, the Examiner rejects claim 17 as allegedly obvious over the combination of Balch, Hartwich et al. and Becker et al. in view of Vo Dinh et al.

Applicants maintain that none of claims 1-19 and 29-38 are obvious over any combination of the above-cited references. Each of the obviousness rejections stated above relies on the combination of Balch and Hartwich et al. either alone or in combination with another reference. A skilled artisan, however, would not be motivated to make any of these combinations. In particular, the primary combination of Balch and Hartwich et al. suffers from the same defect as the combination of Balch and VanBrunt et al. in that a skilled artisan would not be motivated to combine these two teachings. As discussed above, the skilled artisan would not adapt the assay device of Balch to maintain delivery of reagents to sites where binding is detected and to discontinue delivery of reagents to sites that are negative for binding because no more fluid dispensation steps are necessary for such binding assays. None of the other cited references remedy this deficiency. Accordingly, a skilled artisan would not be motivated to

combine the above-cited references as alleged by the Examiner in order to arrive at the subject matter of the above-rejected claims.

In addition to the foregoing, a skilled artisan would not be motivated to adapt the device of Balch with the teaching of Hartwich et al. to save time and cost. It should be appreciated that Hartwich et al. relates to detecting the binding of various substances to molecular arrays. The section of Hartwich et al. specifically discussed by the Examiner states that arrays can be scanned in large sections such that large portions of the array can be eliminated from further processing if they do not contain a signal. In this way the analysis time and associated expense can be considerably reduced (see Hartwich et al. at paragraph bridging pages 10 and 11, or alternatively, U.S. Patent Application Publication No. 2003/0035109, which is the English language equivalent of Hartwich et al., at paragraph [0042]). A skilled artisan would not view this as motivation for adapting the device of Balch so as to “discontinue reagent delivery to one or more wells where failure is indicated while maintaining reagent delivery to wells where failure is not indicated” as recited by independent claim 1 or any of the claims dependent thereon. Rather, a skilled artisan would understand that, fluid delivery of reagents to chemical reactions is not the same as scanning a chip to detect a signal indicative of binding. Certainly eliminating the necessity to scan entire regions of a chip results in the savings of both time and the expense associated with unnecessary scanning. However, eliminating delivery of reagent to some wells in an assay device while maintaining delivery to others does not result in such a savings of time since processing time depends solely on the wells where the reaction occurs. Additionally, because no time savings would result, there are no cost savings resulting from reduced processing time. As such, there is no motivation for a skilled artisan to combine the teaching of Balch and Hartwich et al. None of the other cited references remedy this deficiency. Accordingly, a skilled artisan would not apply the teaching of Hartwich et al. to the device of Balch.

Finally, the combination of Balch and Hartwich et al. does not teach or suggest all of the elements as arranged in any of the above-rejected claims. As discussed above, Hartwich et al. disclose scanning a chip to detect molecular binding. Even if it is assumed, *arguendo*, that a skilled artisan would be motivated to combine the teaching of Balch and Hartwich et al., Applicants would like to point out that any adaptation of the device of Balch with the programming disclosed by Hartwich et al. would not result in the claimed invention. In

particular, adapting the device of Balch with the teachings of Hartwich et al., if successful, might result in a device capable rapidly scanning the assay systems disclosed by Balch. It would not, however, result in the subject matter of any of the above-rejected claims since Hartwich et al. do not teach or suggest modification of device elements involved in setting up or running the reactions. Hartwich et al., at best, might suggest modification to the detector elements of the Balch system but there is certainly no teaching or suggestion to modify the device of Balch to include “a dispensing device configured to discontinue reagent delivery to one or more wells where failure is indicated while maintaining reagent delivery to wells where failure is not indicated.” As such, the combination of Balch and Hartwich et al. does not teach or suggest the arrangement of the elements as set forth in any of the above-rejected claims.

In view of the foregoing remarks, Applicants submit that none of claims 1-19 and 29-33 are obvious. Accordingly, Applicants respectfully request that the Examiner withdraw the rejection of claims 1-19 and 29-33 under 35 U.S.C. § 103(a).

No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, Applicant is not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. Applicant reserves the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that Applicant has made any disclaimers or disavowals of any subject matter supported by the present application.

CONCLUSION

Applicants believe that all outstanding issues in this case have been resolved and that the present claims are in condition for allowance. Nevertheless, if any undeveloped issues remain or

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if any issues require clarification, the Examiner is invited to contact the undersigned at the telephone number provided below in order to expedite the resolution of such issues.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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